Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form

1. Applying for (select one):

☒ (a) Prop 13 Urban Water Conservation Capital Outlay Grant

☐ (b) Prop 13 Agricultural Water Conservation Capital Outlay Feasibility Study Grant

☐ (c) DWR Water Use Efficiency Project

2. Principal applicant (Organization or affiliation): Tahoe City Public Utility District

3. Project Title: Steel Water Line Replacement - Dollar & Villas

4. Person authorized to sign and submit proposal:

Name, title	Don Hale, District Engineer
Mailing address	P.O. Box 33, Tahoe City, CA 96145
Telephone	530-583-3796 x46
Fax.	530-583-1475
E-mail	dhale@tcpud.org

5. Contact person (if different):

Name, title.	
Mailing address.	
Telephone	
Fax.	
E-mail	

6. Funds requested (dollar amount): $1,659,574

7. Applicant funds pledged (dollar amount): N/A

8. Total project costs (dollar amount): **$1,659,574**

9. Estimated total quantifiable project benefits (dollar amount): **$1,680,790**

Percentage of benefit to be accrued by applicant: **95%**

Percentage of benefit to be accrued by CALFED or others: **5%**
Water customers of TCPUD

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

10. Estimated annual amount of water to be saved (acre-feet): **139.6**

    Estimated total amount of water to be saved (acre-feet): **5,584**

    Over ___ years **40**

    Estimated benefits to be realized in terms of water quality, instream flow, other: **N/A**

11. Duration of project (month/year to month/year): 11/02 – 11/03

12. State Assembly District where the project is to be conducted: 3

13. State Senate District where the project is to be conducted: 1

14. Congressional district(s) where the project is to be conducted: 4

15. County where the project is to be conducted: Placer

16. Date most recent Urban Water Management Plan submitted to the Department of Water Resources: March 1997 (current draft to be approved and submitted in March 2002)

17. Type of applicant (select one):
    Prop 13 Urban Grants and Prop 13 Agricultural Feasibility Study Grants:

- ☐ (a) city
- ☐ (b) county
- ☐ (c) city and county
- ☐ (d) joint power authority
- ☒ (e) other political subdivision of the State, including public water district
- ☐ (f) incorporated mutual water company

    DWR WUE Projects: the above entities (a) through (f) or:

- ☐ (g) investor-owned utility
- ☐ (h) non-profit organization
- ☐ (i) tribe
- ☐ (j) university
- ☐ (k) state agency
- ☐ (l) federal agency

18. Project focus:

- ☐ (a) agricultural
- ☒ (b) urban

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One:
A. Project Information Form (continued)

19. Project type (select one):
Prop 13 Urban Grant or Prop 13 Agricultural Feasibility Study Grant capital outlay project related to:

- ☐ (a) implementation of Urban Best Management Practices
- ☐ (b) implementation of Agricultural Efficient Water Management Practices
- ☐ (c) implementation of Quantifiable Objectives (include QO number(s)

  _____
- ☒ (d) other (specify)

  Replace distribution system components

DWR WUE Project related to:

- ☐ (e) implementation of Urban Best Management Practices
- ☐ (f) implementation of Agricultural Efficient Water Management Practices
- ☐ (g) implementation of Quantifiable Objectives (include QO number(s))
- ☐ (h) innovative projects (initial investigation of new technologies, methodologies, approaches, or institutional frameworks)
- ☐ (i) research or pilot projects
- ☐ (j) education or public information programs
- ☐ (k) other (specify)

  _____

20. Do the actions in this proposal involve physical changes in land use, or potential future changes in land use?

- ☐ (a) yes
- ☒ (b) no

If yes, the applicant must complete the CALFED PSP Land Use Checklist found at http://calfed.water.ca.gov/environmental_docs.html and submit it with the proposal.

Consolidated Water Use Efficiency 2002 PSP
Proposal Part One
B. Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form is authorized to submit the proposal on behalf of the applicant; and

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant.

_____	Donald A. Hale, District Engineer	02/27/02
Signature	Name and title	Date

Project Summary

The Tahoe City Public Utility District (District) is submitting this grant application for financial assistance to replace 14,850 lineal feet of steel water lines, house services, fire hydrant leaders and fire hydrants within the District's water service area. The lines in question range from 35 years to 40 years in age and are at the end of their design life. The lines are leaking well above accepted levels and the deterioration is accelerating. The District is experiencing water loss along with accelerating maintenance and pumping costs to the point it is no longer cost effective to delay replacement.

It is estimated that the annual water loss is 139.6 acre feet per year, which will go up if the lines are not replaced. The estimated cost of replacement is $ 1,659, 574 with an expected life of 40 years. This includes construction, engineering design, inspection, contact administration and environmental processing. A more detailed cost estimate is included with this application. It is estimated that the project will save the District $42,006 per year or $1,680, 240 over the 40 year life of the system with no allowances for inflation. This provides a benefit cost ratio of 1.01. The line replacement will conserve 139.6 acre-feet of water per year or 5,584 acre feet over the 40-year life of the project.

This replacement program is consistent with the recommendations of the District's recently completed Master Water Study. The study has placed a high priority on the replacement of all steel lines in view of their age, condition, water loss and accelerated maintenance and operation costs.

The project is broken down into the Highlands/Villas project, consisting of 3,680 feet of new lines and appurtenances. This section has been given a Priority 1 status in the event the application is not totally funded. The Dollar Point project consisting of 11,170 feet of new lines and appurtenances has been given a Priority 2 status. The Dollar Point project would be broken down into two construction projects.

If funded, the projects would be scheduled for construction in 2003 with the possibility that one of the Dollar Point sections would carryover into 2004.

The District will assume project management responsibilities with Donald Hale assigned as Project Manager. The District will perform inspection.

Preparation of construction plans and documents will be contracted out to an engineering design firm through the RFQ/RFP process. The District will retain a certified testing company to perform all construction testing to assure QA/QC requirements are met.

The project is consistent with state and federal goals for water conservation.

Scope of Work

The Tahoe City Public Utility District operates and maintains a water service area that serves approximately 3,500 residential and 225 commercial customers. The distribution system within the service area is comprised of approximately 55 miles of water lines ranging from 4 inches to 12 inches in diameter.

The system has been acquired over the years by acquisition of small private systems as they became available. The system is broken down into five geographic service areas as follows; Tahoe Forest Tract System, Tahoe City (Sub regional) System, the Alpine Peaks system, McKinney Shores System and the Rubicon System.

The Tahoe Forest Tract system was added to the service area in 1994 and is the newest of the five. The remaining four have been added to the service area incrementally over the past 75 years through the purchase of small private systems and inclusion of systems through normal development of new subdivisions, and condominium projects. The majority of the system was installed at least 30 years ago. There have been no new subdivisions within the District since the Tahoe Regional Planning Agency (TRPA) invoked a prohibition on new subdivisions within the basin in the early 1970's.

Portions of the system have been upgraded over the past 30 years or so through the district's Capital Improvement Program (CIP). These improvements include line replacement along with new lines to strengthen the system, improve efficiency, and provide better service and reliability. The remaining portions of the system that were installed over 40 years ago have essentially reached the end of their design life cycle. The result is accelerated water loss through leaks in the system. The leaks as detected are repaired through an accelerated maintenance program that further adds to the District's operating costs. Minor leaks generally go undetected and repairs are made only when a major leak develops.

The area of greatest concern is where the system was constructed of welded steel mains with galvanized steel water service extensions. Fire hydrant leaders are constructed of welded steel also and pose the same leakage potential. These elements of the system have deteriorated due to damage during installation, poor installation procedures, corrosive soil conditions and damage due to point loadings on the pipe caused by improper backfilling techniques. Deterioration is the result of natural aging as well. The last major contributor to the deterioration is damage done by construction activities on underground facilities that are near to the water lines.

There are two areas containing steel lines that are sustaining major leakage within the District. They are included in the following table.

By Priority Service Area	**Sub Service Area**	**Lineal Feet Of Steel line To be Replaced**	**Estimated Cost***
Tahoe City, 1	Highlands	3,680	$ 392,607
Tahoe City, 2	Dollar Point	11,170	$ 1266,967
Total:		14,850	$ 1,659,574

*The replacement program includes lines, valves, fittings, fire hydrants and leaders, water services and other related appurtenances. Also included is a 15% construction contingency, ten percent for engineering, five percent for inspection/ contract

administration and one percent for environmental processing. A more detailed estimate is included with this application along with an anticipated schedule.

Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring and Assessment

The replacement of these lines has to include the galvanized steel house service connections to the property line because the galvanized steel has deteriorated also. The Fire hydrants have been included because the welded steel hydrant leaders have reached the end of their effective life cycle as well.

The estimated leakage rates for these areas were determined by reviewing water tank levels during the early morning hours during the months of January and February. There is little use of water during these hours and there is no irrigation at Lake Tahoe during January and February. This leads to the conclusion that the majority of any indicated water use would be directly attributed to leakage. An allowance was made for minimal domestic use during this period. An additional allowance was made for other untraceable losses such as bleeders. An average loss of gallons per lineal foot of water mains in the tank service area was then calculated. It was estimated that the steel line areas have a leakage rate of approximately three times the calculated average. The total loss through leakage from the steel lines was calculated to be 88 gallons per minute (gpm). This produces a total water loss of 139.6 acre-feet per year. This procedure was given a cross check by comparing the water pumping rates to the service area to the estimated sewage flows from the service area. This produced a reasonable correlation.

Savings of $42,000 per year would be realized via reduced maintenance, pumping costs, testing and administrative costs. Other intangible cost saving would also result from reduced environmental disruption associated with repairing a leak in a street or easement section.

The project upon completion will be monitored for performance by continued data collection from the remote tank sensors, pumping rate metering, power costs, maintenance records and overall performance of the system.

Qualifications of the Applicant and Cooperators

The Tahoe City Public Utility District has a high reputation with respect to its operation of water systems through out the Lake Tahoe basin. Enclosed is a resume for Donald Hale who will be acting as Project Manager under General Manager of the District.

Benefits and Costs

Land Purchase/Easement: There are no easements or land purchases required other than temporary working easements. The District feels it can obtain these at no cost to the District, because of the benefits to the users in the service area and the general public.

The attached cost estimate gives a break down for engineering/ planning services. The District will select the necessary consulting services through the RFQ/RFP process.

Materials/installation: A construction cost estimate has been included which reflects installation and materials costs.

There are no structures involved with this project.

Equipment Purchases/Rentals: There are no equipment purchases or rentals associated with this project.

The District will require the Contractor to incorporate BMP's as required by the Tahoe Regional Planning Agency and Placer County DPW.

The Tahoe City Public Utility District has included a 5% inspection and contract administration fee in the estimate of cost.

Project /legal fees are not anticipated for this project.

A 15% construction contingency has been added to the construction cost to cover unanticipated increases in the estimated construction cost.

Cost Sharing

The Tahoe City Public Utility District is requesting a 100 % grant in financial assistance for this project.

Benefit summary and Break down

An estimate of the cost benefits vs. actual costs has been included on the estimate of cost summary sheet.

Plans and Specifications

Preliminary plans technical specifications have been included with the application. The plans indicate the general locations of the steel line replacement and the specifications identify materials and construction techniques that are required by the District.

ANTICIPATED PROJECT SCHEDULE

MONTH	DAY	YEAR	PHASE	PHASE DESCRIP.	ITEM	INCR COST*	COST PER PHASE
OCT	15	2002			FINALIZE GRANT CONTRACT WITH FUNDING AGENCY	$ -	
NOV-MAR		2002- 2003	1&2		SELECT CONSULTANT TEAM FOR DESIGN, DESIGN SURVEYS & ENVIRONMENTAL DOCS	$ 4,445	
NOV-MAR		2002- 2003		NO WORK	IT IS LIKELY THAT SNOW WOULD PRECLUDE DESIGN SURVEYS UNTIL SPRIING 2003		
APR	1	2003	1	PRIORITY 1	COMMENCE PREPARATION OF PLANS FOR VILLAS AND HIGHLANDS		
JUN	1	2003	1	PRIORITY 1	COMPLETE CONSTRUCTION PLANS FOR VILLAS AND HIGHLANDS	$ 39,206	
JUL	1	2003	1	PRIORITY 1	CALL FOR BIDS AND AWARD CONSTRUCTION CONTRACT		
AUG	1	2003	1	PRIORITY 1	COMMENCE CONSTRUCTION OF VILLAS AND HIGHLANDS		
OCT	15	2003	1	PRIORITY 1	COMPLETE PROJECT CONSTRUCTION	$ 348,956	$ 392,607
NOV	30	2003	1	PRIORITY 1	FINALIZE GRANT CONTRACT WITH FUNDING AGENCY FOR VILLAS AND HIGHLANDS		
DOLLAR POINT PROJECT TO BE DIVIDED INTO TWO CONSTRUCTION PROJECTS							
APR	1	2003	2	PRIORITY 2	COMMENCE PREPARATION OF PLANS FOR DOLLAR POINT, TWO CONSTRUCTION PROJS		
JUN	1	2003	2	PRIORITY 2	COMPLETE CONSTRUCTION PLANS FOR DOLLAR POINT, TWO PROJECTS	$ 144,744	
JUL	1	2003	2	PRIORITY 2	CALL FOR BIDS AND AWARD CONSTRUCTION CONTRACTS FOR TWO PROJECTS		
AUG	1	2003	2	PRIORITY 2	COMMENCE CONSTRUCTION OF VILLAS AND HIGHLANDS		
OCT	15	2003	2	PRIORITY 1	COMPLETE PROJECT CONSTRUCTION	$1,122,223	$1,261,967
NOV	30	2003	2	PRIORITY 1	FINALIZE GRANT CONTRACT WITH FUNDING AGENCY FOR BOTH DOLLAR POINT PROJS	$ 5,000	$ 5,000
					TOTAL		**$1,659,574**

IT IS POSSIBLE THAT ONE OF THE DOLLAR POINT PROJECTS MAY HAVE TO WAIT UNTIL 2004 FOR CONSTRUCTION. THE PROJECTS WOULD BE OF APPROXIMATE EQUAL SIZE.

* CONSTRUCTION COST HAS 15% CONTINGENCY FIGURED IN. SEE COST SUMMARY SHEET FOR CONSTRUCTION COSTS WITHOUT CONTINGENCY

* ENGINEERING COSTS HAVE ENVIRONMENTAL PROCESSING INCLUDED

* CONSTRUCTION HAS INSPECTION AND ADMINISTRATION COSTS INCLUDED

PROP. 13 GRANT FUNDING APPLICATION
PRELIMINARY COST ESTIMATE FOR STEEL LINE REPLACEMENT

COST SUMMARY FOR STEEL LINE REPLACEMENT — **02/25/02**

GEOGRAPHICAL AREA	SUB AREA	LINEAL PIPE FTGE DIA AS NOTED	UNIT COST	AMOUNT	APPROX HOUSE SERVICES DBL & SNGL	UNIT COST	AMOUNT	FIRE HYDRANTS NEW	UNIT COST	AMOUNT	CONSTR. COST TOTAL ACROSS
TAHOE CITY	HIGHLANDS	3,680	-	276,000	11	700	7,700	8	$ -	16,000	299,700
TAHOE CITY	DOLLAR POINT	11,170	75	837,750	122	700	85,400	22	$ 2,000.00	44,000	967,150
	TOTAL	14,850		1,113,750	133		93,100	30		60,000	$ 1,266,850

GEOGRAPHICAL AREA	SUB AREA	15% CONSTR. CONT.	10% ENGR. COST	5% INSPECTION CONTRACT ADMIN.	1% ENVIRON. PROCESS.	GRAND TOTAL	
TAHOE CITY	HIGHLANDS	44,955	$ 29,970	$ 14,985	2,997	$ 392,607	
TAHOE CITY	DOLLAR POINT	145,073	96,715	$ 48,358	9,672	$ 1,266,967	
	FINAL TOTAL	$ 190,028	$ 126,685	$ 63,343	$ 12,669	$ 1,659,574	FINAL TOTAL

ESTIMATED DOLLARS SAVED AND WATER CONSERVED

WELL PUMPING COSTS PER 1MG	BSTR STA PUMPING COSTS PER 1MG	CONSERVED WATER PER YR ACRE-FT.	PUMPING SAVINGS PER YR.	SAVINGS IN MAINT PER YR.	MISC SVNG'S ADMIN.	LAB SVNG'S/ MONITOR PER YR.	ENVIRON. CLEAN UP	TOTAL SAVINGS PER YR	SAVINGS OVER 40 YR LIFE	AC. FT OF WATER CONSERVED 40 YRS	BENEFIT/ COST RATIO
$ 110	$ 230	140.00	$ 10,520	$ 27,000	$ 1,500.0	$ 1,000	$ 2,000	$ 42,020	$ 1,680,790	5,600	1.01

GEOGRAPHICAL AREA — **PROP. 13 GRANT FUNDING APPLICATION**
TAHOE CITY — **PRELIMINARY COST ESTIMATE FOR STEEL LINE REPLACEMENT**
PRIORITY 1

SUB AREA HIGHLANDS AREA	LINEAL PIPE FTGE 8" DIA.	UNIT COST	AMOUNT	APPROX HOUSE SERVICES DBL & SNGL	UNIT COST	AMOUNT	FIRE HYDRANTS NEW	UNIT COST	AMOUNT	TOTAL ACROSS BOTTOM
HIGHLANDS BSTR STA TO VILLAS	3,380	$ 75	$ 253,500	10	$ 700	$ 7,000	7	$ 2,000	$ 14,000.00	$ 274,500
STEEL HYD. LEADERS	300	$ 75	$ 22,500	1	$ 700	$ 700	1	$ 2,000	$ 2,000.00	$ 25,200
SUBTOTAL	3,680		276,000	11		7,700	8		$ 16,000.00	$ 299,700
								15% CONTINGENCY		$ 44,955
						ENGINEERING @ 10%				29,970
						INSPECTION/CONTRACT ADMINISTRATION @ 5%				14,985
						ENVIRONMENTAL PROCESSING @ 1%				2,997
						FINAL TOTAL				$ 392,607

Tahoe City Public Utility District

GEOGRAPHICAL AREA — **PROP. 13 GRANT FUNDING APPLICATION** — **02/25/02**
TAHOE CITY — **PRELIMINARY COST ESTIMATE FOR STEEL LINE REPLACEMENT**
PRIORITY 2

SUB AREA DOLLAR POINT	LINEAL PIPE FTGE 8" DIA.	UNIT COST ASSUMED	AMOUNT	APPROX HOUSE SERVICES DBL & SNGL	UNIT COST	AMOUNT	FIRE HYDRANTS NEW	UNIT COST	AMOUNT	TOTAL ACROSS
EDGEWATER DRIVE	2,720	$ 75	$ 204,000	32	$ 700	$ 22,400	3	$ 2,000	$ 6,000.00	$ 232,400
DARDANELLES AVE.	1,200	$ 75	$ 90,000	6	$ 700	$ 4,200	2	$ 2,000	$ 4,000.00	$ 98,200
EDGECLIFF WAY	720	$ 75	$ 54,000	6	$ 700	$ 4,200	0	$ 2,000	$ -	$ 58,200
LASSEN DRIVE	-	$ 75	$ -	7	$ 700	$ 4,900	1	$ 2,000	$ 2,000.00	$ 6,900
MAMMOTH DRIVE	1,400	$ 75	$ 105,000	17	$ 700	$ 11,900	2	$ 2,000	$ 4,000.00	$ 120,900
SHASTA CT.	140	$ 75	$ 10,500	2	$ 700	$ 1,400	2	$ 2,000	$ 4,000.00	$ 15,900
OBSERVATION DRIVE	1,100	$ 75	$ 82,500	11	$ 700	$ 7,700	3	$ 2,000	$ 6,000.00	$ 96,200
SHASTA WAY	260	$ 75	$ 19,500	0	$ 700	$ -	0	$ 2,000	$ -	$ 19,500
EDGECLIFF COURT	480	$ 75	$ 36,000	8	$ 700	$ 5,600	2	$ 2,000	$ 4,000.00	$ 45,600
EDGEWOOD DRIVE	500	$ 75	$ 37,500	4	$ 700	$ 2,800	1	$ 2,000	$ 2,000.00	$ 42,300
MARLETTE DRIVE	1,600	$ 75	$ 120,000	19	$ 700	$ 13,300	3	$ 2,000	$ 6,000.00	$ 139,300
ECHO WAY	350	$ 75	$ 26,250	0	$ 700	$ -	0	$ 2,000	$ -	$ 26,250
TOIABE CT.	100	$ 75	$ 7,500	2	$ 700	$ 1,400	1	$ 2,000	$ 2,000.00	$ 10,900
WHITNEY CT.	300	$ 75	$ 22,500	4	$ 700	$ 2,800	1	$ 2,000	$ 2,000.00	$ 27,300
EDGEWATER DRIVE	300	$ 75	$ 22,500	4	$ 700	$ 2,800	1	$ 2,000	$ 2,000.00	$ 27,300
SUBTOTAL	11,170		837,750	122		85,400	22		$ 44,000.00	$ 967,150
								15% CONTINGENCY		$ 145,073
						ENGINEERING @ 10%				96,715
						INSPECTION/CONTRACT ADMINISTRATION @ 5%				48,358
						ENVIRONMENTAL PROCESSING @ 1%				9,672
						FINAL TOTAL				$ 1,266,967

RESUME OF PROFESSIONAL QUALIFICATIONS AND EXPERIENCE

Donald A. Hale
February , 25, 2002

Current Professional Civil Engineering Licences
California, Alaska, Nevada, Oregon

Education
B.S. Civil Engineering, California State University at Chico

Professional Affiliations
Member of ASCE since 1965

WORK EXPERIENCE
April 1999 to Present
Tahoe City Public Utility District
District Engineer in charge of engineering design for the District
Duties consist of coordination of design of District water and sewer facilities, right of way and easement acquisitions. Work with outside consultants on district projects.

April 1999 to February, 2001
Auerbach Engineering Group, Tahoe City, CA
This company bought out Hale-Tippin Consultants of which I was a general partner.

Project Manager on $1.4 M subdivision project, including design of water distribution system for the subdivision.

Project Engineer on $1.7M bike trail and bridge project. Project Manager on $0.15 M Lake Tahoe pier construction project. Provided QA/QC overview on a number of public works and private client projects.

Sept. 1987 to March,1999
Hale-Tippin Consultants, Tahoe City, CA
Owner/Partner of a 6 to 10 person civil engineeering office.
Project management, planning and design services. Design of subdivision improvements, bridges, piers, residential structures, water systems, sewer systems, pump stations, roads, bike trails, streets, etc.
Design and construction overview of 2,000 foot lake intake line at Lake Tahoe.

Surveying services included property surveys and construction staking, ALTA surveys, etc. Performed agency processing, including water quality/waste discharge requirements, Division of Real Estate final reports.
Cost estimates, specifications and technical reports. Also performed as employer, personnel manager, and finance officer; prepared monthly billings and conducted other duties associated with owning a consulting firm.

May, 1986 to Sept, 1987
Raymond Vail and Associates, Tahoe City, CA
Office manager in charge of 8 to 12 person office. Subdivision design, water and sewer systems, pumping stations, roads, small structures, feasibility studies, specifications,

technical reports, employee relations, billings, and other management responsibilities. Office also did property surveys, construction staking, ALTA surveys etc.

August, 1984 to May,1986
Al Hoty Establishment, Al Khobar, Saudi Arabia.
Project Manager in charge of recruiting skilled workers and providing housing and transportation. Prepared bids for construction contracts, M&O contracts for ARAMCO and other clients in the Kingdom. Company had approximately 1,100 employees and did approximately $30M worth of work a year.

August ,1982 to August, 1984
Frank Moolin and Associates, Anchorage, AK
Project Manager on construction of 52,000 S.F. totally enclosed/heated bus storage facility for Anchorage Rapid Transit vehicles. Estimated cost: $5M
Monitored Contractor's progress, prepared progress pay estimates, CCO's, coordination between Contractor, Project Architect and other project consultants. Reported directly to the office of the Mayor of Anchorage.

Project Manager for approximately 50 "Bush Community" post office installations throughout Alaska. Preparation of plans and construction documents and logistics for delivery. Estimated cost $ 0.1 M/Unit
Client: U.S. Postal Service

1965 to 1982
Employed by various public and private entities and performed normal civil engineering duties and described briefly below.
Dates of employment as noted below are approximate.
1980 to 1982 Raymond Vail and Associates, Tahoe City, Ca. - Field Office Manager
Design of 2,000-foot lake intake and submersible pump facility at Lake Tahoe.
1973 to 1982 Owner of Auburn Engineers, Auburn, Ca.- Design of water distribution and sewer collection systems for urban development projects.
1969 to 1973 Raymond Vail And Associates, Fair Oaks and Tahoe City, Ca. – Design and construction overview for $1M sewer assessment district. Design and construction of $.35M sewer assessment district.
1968 to 1969 City of Yuba City, Ca. - Assistant City Engineer
Prepared master sewage plan for extending city sewer system approximately 2 miles beyond the existing city limits. Plan included selection of sites for sewage pump stations throughout the study area.
1967 to 1968 U. S. Forest Service, Wallawa-Whitman National Forest. Baker, Oregon-Civil Engineer, Grade GS-9
Designed water system for the Forest Service Compound. System connected to the city water supply.
1965 to 1967 City of Chico, Ca. - Junior Civil Engineer, Prepared master drainage study for one major section of the City storm drainage system

February 21, 2002

To Whom It May Concern

Project No.: 017-00-16/1

SUBJECT: Tahoe City Public Utility District – Urban Water Management Plan Update

The Tahoe City Public Utility District (District) has retained West Yost & Associates (WYA) to prepare an update to the current Urban Water Management Plan (UWMP). The previous UWMP was completed in 1997. The major portions of project include projecting the water demands, analyzing the water supply, and analyzing the current water management measures.

Work performed to project the water demands included incorporating the updated water demand projections into the Urban Water Management Plan from the current Water Master Plan, the 1997 UWMP, the water production data over the past five years, and the population projections contained in the current Water Master Plan. Demands were projected for full build-out of parcels anticipated to be developable.

Work performed to analyze the water supply included summarizing the availability and adequacy of water supplies from the District's current sources. Additionally, WYA evaluated the need for additional supplies and identified alternatives for meeting those needs.

Work performed to analyze the current water management practices included analyzing the measures which the Client has used, or plans to use, to promote the efficient use of water, including a review and update of the District's current urban water shortage contingency plan and an update of the potential for use of reclaimed water.

The 1997 Plan was updated to integrate the results of the work tasks described above. A draft Plan for the District's review is expected before the end of February 2002, and the final Plan is expected in March 2002.

Sincerely,

WEST YOST & ASSOCIATES

James P. Connell
Senior Engineer

JPC:tgp

a:\luwmp.doc